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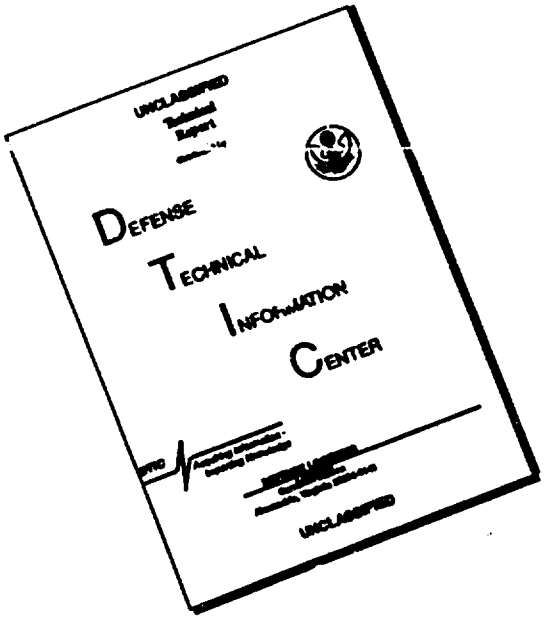

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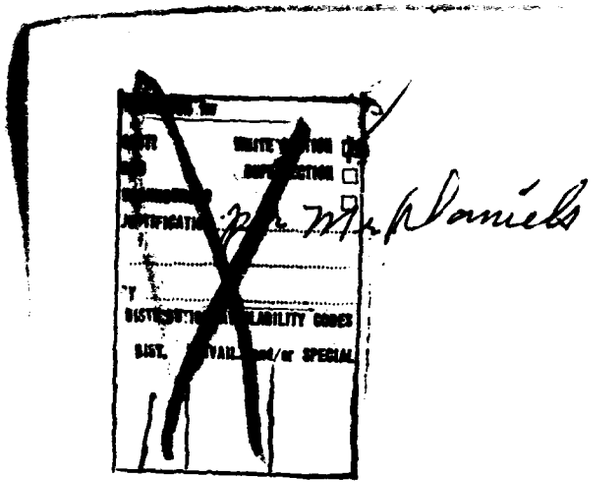

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DETECTION OF RODENTS RECOVERED UNDER NATURAL CONDITIONS FROM PLAGUE WITH THE AID OF THE PASSIVE HEMAGGLUTINATION TESTS

[Following is the translation of an article by M. N. Myasnik, published in the Russian-language periodical Materialy Nauchnoy Konferentsii po Prirodnoy Ochagovosti i Profilaktike Chumy (Materials from the Scientific Conference on the Natural Focalness and Prophylaxis of Plague) Alma-Ata, Feb., 1963, pages 158-159. Translation performed by Sp/7 Charles T. Ostertag, Jr.]

Using the hemagglutination and agglutination reactions*, we investigated the sera of great gerbils for the presence of antibodies which are specific for plague. The animals came from various sectors of the Ili-Karatalskiy interfluvial area (Yuzhnoye Pribalkhashye) and the Iliyskaya basin, which are not equally significant based on their epizootological characteristics.

* As the antigens in the hemagglutination reaction we used sheep erythrocytes, charged with fraction LA of the plague microbe capsular substance, and in the agglutination reaction -- a 24 hour agar culture of P. pestis.

In the Iliyskaya basin a plague epizootic among great gerbils had not been recorded since 1940, and in the natural landmark of Baschi, which pertains to this same territory, there had not been a plague epizootic since prior to 1940. During the investigation of 27 sera of gerbils which had arrived from Baschi in January -- February 1961, in seven of the animals the hemagglutination reaction for plague turned out to be positive, and the agglutination reaction with the bacterial antigen was negative. Shortly after on this territory five cultures of the plague microbe were isolated from great gerbils (Doctors V. A. Volokhov, V. L. Shatalova, and A. I. Gavryushina). Thus, the plague positive results of the hemagglutination reaction in seven great gerbils, which had arrived from a territory which earlier had been considered as nonepizootic, were confirmed by the presence of the plague microbe here, which testified to the specificity of this reaction and its greater sensitivity in comparison to the agglutination reaction.

On the territory of the Ili-Karatalskiy interfluvial area a plague epizootic has been taking place since 1956, but in the period of our investigations a drop in the epizootic process was noted here and only local foci of infection were recorded. In working on this territory, we investigated the sera of great gerbils which had arrived from two

sectors: From a territory where there had been no plague epizootics in recent years (fourth station), and from the sector of the second station where at the given time a local epizootic was noted (during a mass examination 39 cultures of the plague microbe were isolated). It is significant that among the blood sera of gerbils which were recovered from the fourth station, out of 27 sera investigated no positively reacting sera were detected. At the same time, among the animals which had arrived from the territory of the second station there were 28% with a positive hemagglutination reaction. This testified to the presence on this sector of a significant number of gerbils which had recovered from plague, and consequently to the data of epizootological observations. Ten great gerbils reacted negatively. These were received by B. M. Kasatkininy from the vicinity of the village of Chilik (on the left bank of the Ilya River) where the settlements of rodents had a strictly isolated nature and no epizootics were detected among them.

In summary, the observations conducted, in spite of the preliminary nature, confirm the feasibility of using the passive hemagglutination reaction for the diagnosis of plague in great gerbils. By utilizing the passive hemagglutination reaction RPGA [abbreviation not verified] as a supplementary method of investigation, it is possible to more thoroughly study the natural foci of plague in the deserts of Central Asia.